

IP Telephony

The Real Estate Telecommunications Future



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Clareity Consulting & Communications, Inc.
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A day in the life of an IP Telephony enabled Agent

As the "Ode to joy" melody rang on her wi-fi home phone alerting her that it was 6:30 a.m. and time to awake, Jane Realtor reached across her bed to turn it off. It was sunny and warm in Phoenix on that Tuesday morning, July 22, 2004. Jane had a busy schedule, so she eased to the side of her bed, sat up and checked her phone to review all of her appointments. While reviewing her appointments, an instant message appeared alerting Jane that a new home had just been placed on the MLS that met the search parameters entered by her customer, John Smith. Acting on the alert, Jane immediately forwarded the information with a touch of a button to her client, requesting a showing time of 2:00p.m. later that day. After the message had been sent, a tentative appointment had been automatically scheduled in her integrated calendar. This information was being automatically synched to her other devices on her unified communications system.

As Jane looked down at her wi-fi phone, she noticed that it was time to head to the office. This morning, Jane wasn't heading to the office that she usually works out of; she was going to visit a brand new office that her Broker had recently opened. As Jane approached the office while talking on her dual mode wi-fi/cellular phone, the wireless IP network in the office detected Jane and instantly switched her phone from cellular operation to voice over IP using the offices network to continue with the conversation. The switch in phone modes was not evident to Jane, the quality of service did not falter.

As Jane walked into the building, already completely 'connected' and ready for work, she sat down for the first time in the lobby, waiting for her clients to arrive. "This is a nice office - so convenient to the new developments on this side of town that so many of my clients want to look at," she thought. With a few minutes on her hands, she pulled out her phone and instantly could scroll through a list of who had called and e-mailed while she was en route and on the other line. She listened to one of the messages, then clicked a button on the phone and spoke: "Sam, please get back to Mr. Smith, set up a driving route and an appointment." Jane then pushed another button, sending the client's message along with her directive to her assistant. One of the messages on her phone appeared to be a fax - Jane opened it, making sure the inspection fit her own recollections before pressing a button and sending the fax, along with a text message of her approval over to her transaction coordinator. Jane punched another button on the phone and up came her calendar - "Hmmm, only 5 more minutes till those clients arrive". Suddenly the phone rang. Jane usually appreciated that her extension went with her no matter what office she was working out of, but this time it wasn't anyone Jane wanted to speak with, so she let it go into voicemail. She browsed the latest office announcements on her phone for a minute, then re-listened to some of the previous voicemails from the client she was about to meet, reminding herself of their property preferences. The phone beeped once, and Jane paged over to her calendar, where her assistant had set up her afternoon appointment along with driving directions to the East Valley office and to those homes that Mr. Smith had indicated a desire to visit last time he was on her web site. "Good," thought Jane, "I bet this turns into two sales in one day. This month is right on target!"

Introduction

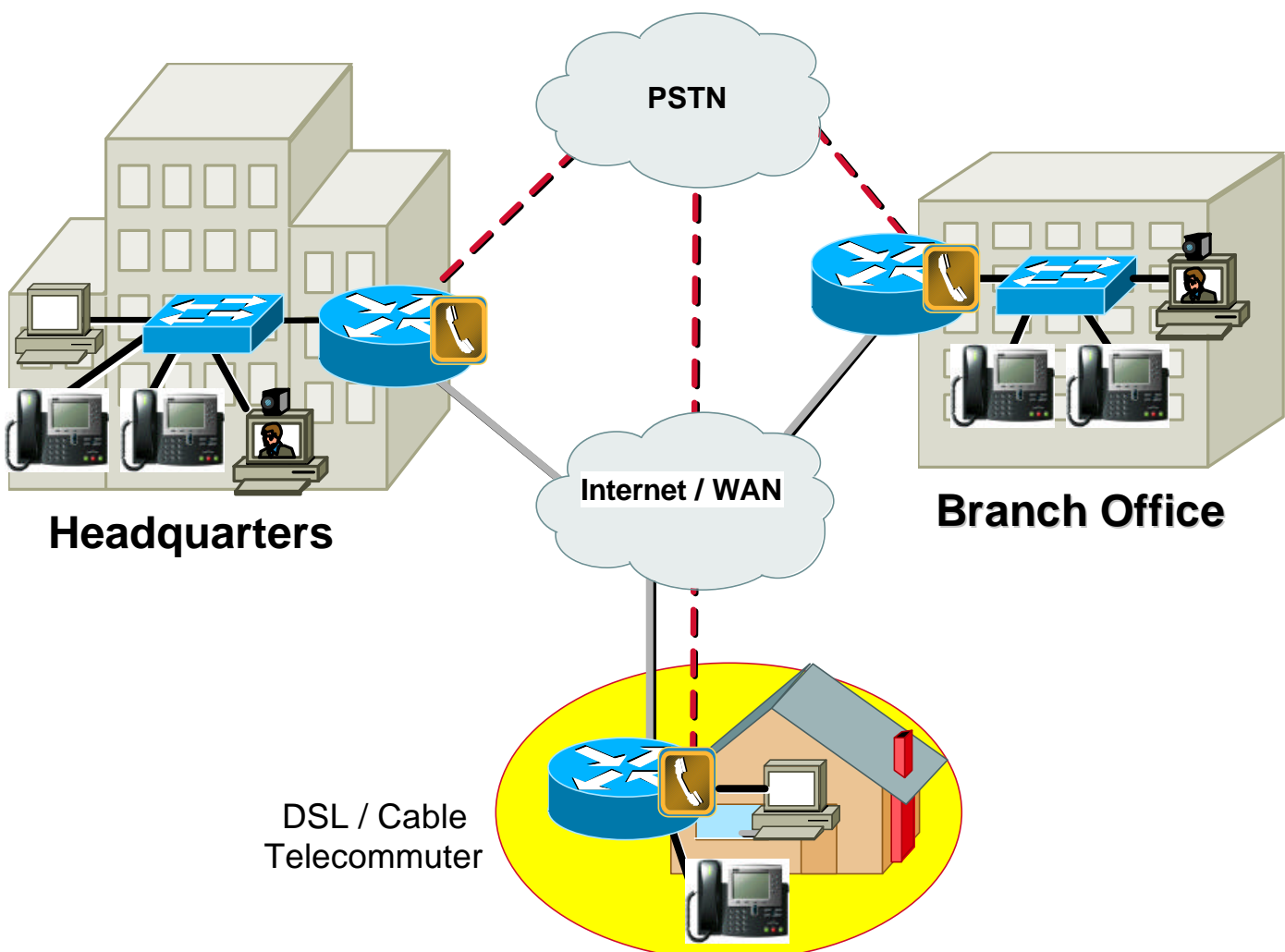
While the future of telecommunications is very exciting, today's process of providing telecommunication services for Agents has long been a painful and expensive experience for the Real Estate Broker. Managing different phone systems in multiple offices, each with their own voice mail systems, unique billing schedules and incompatible hardware is a costly and time consuming exercise.

IP Telephony may be the solution, potentially a *free* solution. In fact, IP Telephony systems typically pay for themselves within 12 to 18 months.

IP Telephony is the newest technology that can dramatically reduce telephone costs and allow for greatly enhanced capabilities such as unified messaging and reduced cost voice mail systems for Real Estate offices. Implementation of an IP Telephony solution allows compressed voice and fax calls to be routed over the Internet, thus eliminating the need for multiple systems or networks.

In the past, Real Estate Brokers have typically maintained two distinct networks in their offices: a network for voice transmissions (usually consisting of Private Branch Exchange, or PBX's) and a separate network for data transmissions (LAN's, WAN's, etc.). Separate departments, or two different support people within the organization (who often did not coordinate their efforts) commonly controlled these networks. The separation and often times, duplication of these networks resulted in increased costs for installations, monitoring, and ongoing maintenance. In an effort to reduce these costs, many companies outside the Real Estate industry have already chosen to implement some form of IP Telephony technology in their company.

The following diagram (courtesy of Joe Cusack at Cisco Systems) illustrates how an IP Telephony solution can work in a Real Estate Environment:



History

Since the 1960's when digital voice communication first emerged, the Private Branch Exchange (PBX) has been supported worldwide as the primary means of voice communication. Originally transmitting only analog signals, the PBX ultimately switched to using digital communication, which offered solutions to the noise and interference problems inherent in the analog system. The modern PBX converts all analog signals into digital transmissions at the calling end office that initiated communication and reverses the processes at the receiving end office.

Although highly rated for reliability and voice clarity, the PBX has four significant disadvantages: 1) Inefficient use of networking channels - dedicating an entire channel for each conversation - meant larger bandwidth purchases were required; 2) Expensive bandwidth resulted in high telephone bills; 3) Expensive to extend to multiple sites, especially as the sites get small; and 4) Incapable of carrying traffic other than compressed voice.

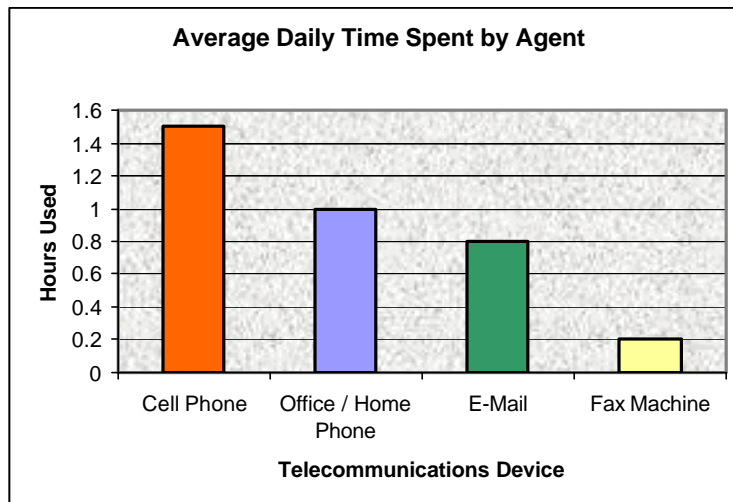
IP telephony has a relatively short history, which began with Vocaltec, Inc.'s introduction of its Internet Phone software in February of 1995. For the first time, Vocaltec's software enabled analog signals converted into digital IP packets to be transmitted over the Internet. By using the Internet, businesses could eliminate much of their communications expenses. In addition, they could use the bandwidth of their communications channels more efficiently through converging audio, video and data. The new software quickly captured industry interest, created market demand for the communications capability and sparked competition among IT vendors, including Cisco who has emerged as one of the clear leaders in the industry.

Like any new technology, the first IP Telephony software had some problems. First, there was a lack of connectivity between an IP telephony network and the PBX; IP telephony could successfully occur only when both parties were using the same software. However, this problem was remedied by the development of routers, which contained voice-processing cards and provided the necessary interface between the IP telephony software and the PBX. The second hurdle was the clarity of voice that most businesses expected for communications. Unlike PBX, the packet-switched nature of the Internet Protocol hindered reliability and posed a significant concern for the level of quality. Newly developed network components and protocols, have improved overall quality of communications. The quality of IP Telephony is so good, that it is now almost impossible to distinguish whether an end user is on a traditional PBX system or using IP Telephony.

IP Telephony is considered a powerful communications tool, and new advances in the technology are being made quickly. A recent study conducted by Phillips InfoTech found that 60 percent of enterprise decision makers agreed or strongly agreed that: "The decision to implement IP telephony is no longer a question of 'if we should do it,' but it is now a question of 'when we should do it.'"

Benefits of IP Telephony for Real Estate Organizations

Real Estate Agents are one of the heaviest users of telecommunication services. From cell phones, to fax machines, to e-mailing, Agents need to be in constant communication with clients and others involved in the real estate transaction process. On average, Clarity estimates that the typical Agent spends 3 and ½ hours each day using a communication device as evidenced by the graph on the following page:



Properly implemented, IP Telephony technology can provide many benefits to Real Estate organizations. Some of these benefits include cost savings, productivity gains, improved inter-company communications and improved customer/client communications.

Cost Savings

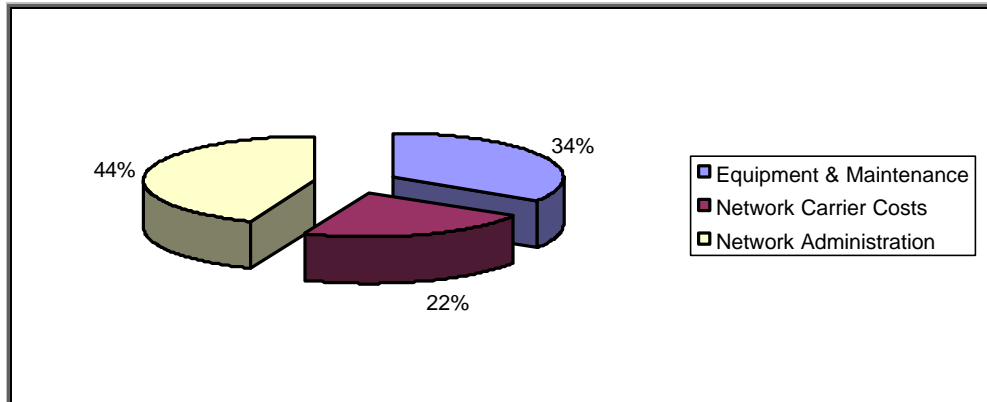
There are numerous ways for a Broker to realize cost savings through utilizing IP Telephony technology. At the top of the list is long-distance savings. A Real Estate company can virtually eliminate its long-distance toll costs by re-routing long-distance calls through its intranet (or through a VPN or the Internet) and bypassing its long-distance carrier.

Another major cost-savings benefit of implementing IP Telephony results from reducing the Broker's capital and administrative costs for its network infrastructures. A broker with 15 locations today has 15 PBXs. Utilizing IP Telephony, these PBXs go away and are replaced by an intelligent network. A dollar invested in a converged network benefits every application and every user, a sharp contrast with a traditional phone system, where a dollar invested in the PBX only benefits the phone system. By consolidating its communication networks into one network, a company's infrastructure can become significantly cheaper to maintain and easier to manage and expand. Once reliance on duplicate networks has been reduced or eliminated, a company can more efficiently utilize its physical and labor resources. For example, with a traditional PBX telephone system, relocating an agent from one office to another requires a manual change in the system by a PBX technician. Some companies have been able to increase the productivity of their network support staff by 33 percent. With an IP-based telephone system, the technician or the agents themselves can simply plug in the IP device at the new location and the agent is up and running.

Significant cost savings can also be realized through more efficient bandwidth utilization. Because IP Telephony technology employs voice compression techniques, voice transmissions are usually 5 to 30 times smaller than normal voice transmissions and, thus, require less bandwidth. Many IP Telephony calls can be transmitted simultaneously across the same communication line while each call made through a circuit-switched network requires a single dedicated circuit. Additionally, some IP Telephony devices can further reduce bandwidth consumption by using "silence suppression". This feature stops the transmission of voice packets during periods of silence in the conversation, eliminating waste of bandwidth space that may be used for other transmissions and applications.

Return on Investment (ROI)

According to Cisco Systems, “Initial return on investment (ROI) analyses have determined that IP Communications deployments deliver an average payback within 12 to 18 months.” On average, contributions to the total cost savings are:



The City of Dallas, Texas recently replaced 6 separate networks with a single converged IP network amongst its agencies. The new Cisco IP solution handling all of their voice calls promises to save \$21 Million over the next 10 years.

The Cottonport Bank, a well known local bank located in Cottonport, Louisiana, more closely resembles a Real Estate Organization. The Cottonport Bank has 13 offices located throughout southern Louisiana. In 2002, the bank decided to upgrade its PBX network and multiple branch voice mail systems and went with an IP Telephony solution provided by Cisco. Administrators at Cottonport Bank estimate that they are saving \$80,000 this first year by implementing this new IP Telephony network.

Functionality Advantages

In addition to substantial cost savings, adopting IP Telephony in a converging network allows for greater functionality and additional features for the Real Estate Organization.

“Follow Me” functionality from Office to Office

Real Estate Agents are mobile people. It's very common for Agents to roam from office to office. With an IP Telephony solution, when agents move around, they simply take their phone with them and plug it into the office that they may be visiting – or they can log on to any unassigned phone that is already in that office. Their “office calls” will automatically be routed to their phone, no matter where their phone is. From a Broker's perspective, when Agents are out of the office on listing presentations, showings, etc., their desk space or office sits empty. Other agents may not be able to use this desk space because their phone extensions do not travel with them. Many Brokers are now implementing the practice of “hot-desking” or virtual offices, where agents are not assigned a permanent desk. Instead, agents will use an available open desk to conduct their business. This practice dramatically reduces office overhead and allows for a greater number of agents in a given fixed space.

In addition to Agent mobility, opening a new Real Estate office is a time-consuming and costly venture for the Broker. One of the many substantial costs is in the deployment of a telecommunications system unique to that office. With a converged networking utilizing IP Telephony, a Broker is not required to spend the significant investment in a new

telecommunications infrastructure for that new office. New agents can simply be assigned an IP Telephony phone and within minutes be added to the Broker's existing IP Telephony System. This is especially significant when Broker's acquire a new company. The process of migrating the agents onto a new phone system is inexpensive and can be done very quickly, often times, overnight.

A new product by Cisco leverages the power of IP Telephony with the freedom of Wi-Fi technology. The Cisco phone operates on the easy-to-use and popular 802.11 wireless infrastructures already existing in many Real Estate Offices. Using this phone, an Agent can simply walk into, or near an office and the network will automatically detect the agent and the phone will be active. The Agent's office phone calls will automatically be delivered right to the handset without re-programming. For example, if Jane Realtor works out of the San Francisco Office 80% of the time, and then travels to another company office in Oakland, Jane can simply turn on her handset when she arrives in the Oakland office, and all of her office calls will be delivered to her automatically.



IP Video

With Broker commissions shrinking, and expenses increasing, Brokers are looking for ways to improve productivity while controlling costs. While monthly managers meetings and face-to-face interaction are important, the expense and "down time" in traveling to these centralized meetings are becoming cost prohibitive. Many Brokers are turning to Video Conferencing as a feasible solution.

Some compact desktop IP Videophones are now available that utilize IP Networks to make real time video calls across multiple regions with absolutely no call charges. To reach contacts, a user simply selects their contact from the phone book and presses the call button. The IP videophone will then instantly connect with the remote contact and they will be able to enjoy real time quality video calls with out the worry of how much the call is costing, as well as being able to avoid the wasted travel time.



Unified Messaging

Unified messaging means the ability to deliver all different types of communications (e-mail, voice mail, fax) into a single inbox allowing Agents to access all of these communications using any web-enabled device including their phone. IP Telephony allows Agents to review, reply, schedule and communicate effectively from wherever they may be. Although 3rd party vendors have offered unified messaging for a few years, a converged network utilizing IP Telephony allows for the necessary platform to make this a Broker's reality without having to rely on outside vendors. In addition, Unified Messaging will become a recruiting and retention tool in the future as well as a possible revenue center for the Broker.

Weather reports, real time mortgage rates and the MLS on the phone

Remembering that this technology is not the standard telephone system that Agents have become accustomed to, the ability to access information extends as far as the imagination can reach. For example, while talking on the phone to a client, Jane Realtor can also be surfing the

web for the weather report on that same phone. After Jane shares the weather with her client, she can then log into her local MLS system and check for new listings that her client may be interested in. Data can also be pushed to each phone by the Broker, alerting the Agent to real time mortgage rates and other various products and services offered by the Broker. The Broker has the ability to manage the flow of information to insure its accuracy and availability. All of this information is available to Jane from her Office, Home Office, or on the road in a hotel room with a high-speed Internet connection.

Converging with the cell phone

Once there's widespread Wi-Fi in the home, the office, the neighborhood, and enough public spaces, wireless convergence will happen. Today, it's not uncommon to find Real Estate Agents who are fully wireless: a cell phone outside the home, cordless phones within the home offices, and a Wi-Fi network for data at the office. Yet, while some of these devices share the same frequencies (cordless phones and Wi-Fi both use the 2.4-GHz and 5-GHz bands), they are based on different standards and can't talk to each other.

Bringing them together is just a matter of time. Wi-Fi is as capable of transmitting voice as any cordless phone, and because calls travel over IP rather than over a phone network, they are far cheaper. By the same token, several companies are planning to add Wi-Fi to cell phones, allowing users to make calls over the Internet when in Wi-Fi range. The dream to emerge from this is a single device that moves seamlessly from home to road, using the best network available wherever it is. Imagine, your phone might be free to use at home and in the Real Estate Office, cheap in your neighborhood and downtown, free again at the corner café trying to boost their business, and the normal price when traveling down the freeway at 60 mph.

Common concerns about transitioning to IP Telephony

There are a few common concerns regarding the functionality and costs of participating in an IP Telephony solution. The concerns tend to focus on quality, reliability, and adoption.

Voice Quality

Latency, jitter, and echo were early problems with IP Telephony that were largely caused by network issues. A converged network must be able to separate each traffic type and handle it according to its unique requirements. For example, data traffic is not time-sensitive; it travels in bursts and requires accurate delivery. However, voice traffic is very time-sensitive. Adding voice packets to a bursty IP environment requires an intelligent network. An organization needs to understand how important it is to have a reliable and robust network for voice, in addition to data and video. Planning a network strategy before deployment saves time and money, and eliminates user frustration. Most IP telephony vendors can now deliver toll-quality voice. Even if an organization is not fully committed to a convergence strategy now, it makes sense that all of its new data equipment be equipped to handle voice and video because this will ease the path to eventual migration.

Reliability/Availability

Reliability is also a critical concern for companies that are contemplating converging their networks. Universal experience with traditional analog or digital phones is that upon picking up the receiver, the user receives a dial tone 99.999 percent of the time. It is often assumed that when merging voice onto a data network, it will become unreliable. However, the PBX is inherently no more reliable than a data network; what makes it more reliable is that organizations recognize that voice is mission critical and therefore usually invest in the necessary redundancy and power backup systems. Many IP telephony vendors have built similar levels of redundancy into their systems. With the correct design considerations and best

practices, converged networks running IP Telephony are achieving the same level of reliability to the traditional voice network. The added benefit of building redundancy into a new network is that organizations can also improve the reliability of their data and video traffic.

Investment Protection/Migration

Many Real Estate organizations have made significant investments in their existing voice and data networks. They are understandably concerned about their ability to protect these investments while migrating separate networks to a converged networking model. Therefore, a low-risk migration path is required from the old world to the new world. Most converged networking vendors such as Cisco have created products to ease this transition and ensure that new equipment can integrate with the existing infrastructure. As in any technology investment, especially one with such far-reaching implications as convergence, an initial investment in the technology will be required to migrate to a converged network. For some Brokers that are opening new offices, retiring PBXs, or already planning to make significant investments in data networking equipment, the insertion point for this new technology is clear.

Conclusion

Making a decision to invest in new technology and infrastructure in uncertain economic times is a difficult choice. Providing Real Estate Agents with the tools and functionality that they need while controlling expenses is the challenge facing Brokers in this era of new technology and processes. Investment in technology must support the Agents as well as provide for quick financial returns. IP Telephony can do just that. IP Telephony's ability to reduce costs, increase functionality and drive network convergence can maximize a Real Estate Organization's return on investment.

IP Telephony is the communication standard of the future. To date, thousands of large companies outside of the Real Estate Industry have adopted and implemented this solution. While a complete migration to IP Telephony may take a few years, Real Estate Organizations who adopt this technology now will receive a fast ROI, strengthen the infrastructure of the company and be better positioned for future growth.

For more information regarding IP Telephony, please contact Clarity Consulting at (480) 368-8100 or online at www.callclarity.com.

About Clareity

Founded in 1996, Clareity continually strives to provide our clients a truly independent and unique perspective. Due to our extensive involvement and interaction across the entire Real Estate industry, we do *truly* have a finger on the pulse of the industry. Clareity has successfully executed a vast array of consulting projects for our clients, related to:

- IT Security Audit and business continuity assessment
- Development and analysis of RFPs for MLS systems, public records, broker systems, and TMPs
- Mergers and acquisitions and strategic alliances
- New product marketing and business plans
- Product integration specifications
- Competitive analysis
- Contract negotiation
- Project management and implementation assistance
- Market research including agent, broker, and staff electronic and telephone surveys as well as onsite focus groups

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